

TITLE OF THE INVENTION

TONE INFORMATION PROVIDING SYSTEM

BACKGROUND OF THE INVENTIONField of the Invention

5       [0001]       The present invention relates to a tone  
information providing system.

Related Background Art

10       [0002]       When calling a party from a communication  
terminal (such as landline phone, mobile phone,  
facsimile communication unit and so forth, hereinafter  
same) capable of generating a tone in accordance with  
the information sent through a communication network  
to another communication terminal, a tone such as a  
dial tone (DT), ring back tone (RBT), or busy tone  
15       (BT) is output from the receiving section of a  
communication terminal of a calling source in  
accordance with the phase of the calling operation.  
Each of these tones is output by converting an  
electrical signal sent from a switchboard through a  
20       communication network into a tone. Therefore, these  
tones have been previously decided. However, the art  
disclosed in the patent document (Japanese Patent  
Laid-Open No. 2002-33801) is known as an art capable  
of setting a DT, RBT, or BT to an optional tone.

25       SUMMARY OF THE INVENTION

[0003] In the case of the conventional art disclosed in the above patent document, an electrical signal is converted into a tone set by a calling party in the communication terminal of the calling party.

5 Therefore, it is impossible that a called party sets his (or her) favorite music and sends the music to a calling party as an RBT.

[0004] Therefore, it is a problem of the present invention to provide a system allowing a called party  
10 to set the RBT of a calling party.

[0005] To solve the above problem, a tone information providing system of the present invention comprises receiving means for receiving calling information being transmitted from a communication  
15 terminal used by a user and capable of generating a predetermined tone in accordance with the tone information sent through a communication network, and including calling-terminal specifying information for specifying the communication terminal and called-  
20 terminal specifying information for specifying a communication terminal of a calling destination; tone information selecting means for selecting tone information corresponding to the called-terminal specifying information out of tone information stored  
25 in tone information storing means in which called-terminal specifying information and tone information

are related each other and stored; transmitting means  
for transmitting the selected tone information to the  
communication terminal used by the user; and tone  
information recording means for relating the calling-  
5 terminal specifying information, the called-terminal  
specifying information and the tone information each  
other and storing these pieces of information in past-  
record information storing means.

[0006] According to a tone information providing  
10 system of the invention, tone information is selected  
in accordance with called-terminal specifying  
information included in calling information out of  
called-terminal specifying information and tone  
information related each other and stored in tone  
15 information storing means. Therefore, it is possible  
to provide the tone information set by a user of a  
communication terminal of a calling destination to a  
communication terminal used by a user. Moreover,  
because the calling-terminal specifying information,  
20 called-terminal specifying information and tone  
information are related each other and stored in past-  
record information storing means, it is possible to  
hold the information, for example, showing which tone  
information was used when having called which calling  
25 destination.

[0007] Moreover, it is preferable that a tone information providing system of the invention further comprises request receiving means for receiving a disclosure request being transmitted from an information communication terminal used by a user and including at least the calling-terminal specifying information; past-record selecting means for selecting the information corresponding to the calling-terminal specifying information and being stored in the past-record information storing means in accordance with the received disclosure request; and past-record transmitting means for transmitting the selected information to the information communication terminal. Because relevant information such as the tone information stored in the past-record information storing means is transmitted in accordance with the disclosure request transmitted from the information communication terminal used by the user, it is possible to know the tone information, for example, which was used when having called a specific calling destination.

[0008] Furthermore, in the case of a tone information providing system of the invention, it is also preferable that time information relating to the time when transmitting means has transmitted tone information is related to the calling-terminal

specifying information, the called-terminal specifying information and the tone information, and that these pieces of information are stored in past-record information storing means. Because the time information is related to the information stored in the past-record information means, information retrieval can be made in accordance with the time when the transmitting means transmitted the tone information.

[0009] Furthermore, in the case of a tone information providing system of the invention, it is also preferable that the time information relating to the time when the transmitting means has transmitted tone information is included in disclosure request. Because the time information is included in the disclosure request, information retrieval can be made in accordance with the time when the transmitting means transmitted the tone information.

#### BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an illustration for explaining a tone information providing system which is an embodiment of the invention;

FIG. 2A is an illustration showing an example of the information stored in the tone information storing section in FIG. 1;

FIG. 2B is an illustration showing an example of the information stored in the tone information storing section in FIG. 1;

5 FIG. 3A is an illustration showing an example of the information stored in the past-record information storing section in FIG. 1; and

FIG. 3B is an illustration showing an example of the information stored in the past-record information storing section in FIG. 1.

10 DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0010] It is possible to easily understand the knowledge of the invention by referring to the accompanying drawings shown for only illustration and considering the following detailed description.  
15 Moreover, embodiments of the invention are described by referring to the accompanying drawings. When possible, the same portion will be provided with the same symbol to omit overlapping description.

[0011] A tone information providing system which is  
20 an embodiment of the invention is described below by referring to FIG. 1. FIG. 1 is an illustration for explaining a tone information providing system 10. The tone information providing system 10 is constituted so that it can communicate with a mobile  
25 phone 30 (information communication terminal or communication terminal) and mobile phone 35

(information communication terminal or communication terminal) through a voice communication network 20 (communication network) and data communication network 25 each other. The mobile phone 30 is a mobile phone used by a user who utilizes the tone information providing system 10, which is constituted so that voice communication and data communication can be made. The mobile phone 35 is a mobile phone of other party who is called by the user of the mobile phone 30, which is constituted so that voice communication and data communication can be made.

[0012] The tone information providing system 10 is further described below. The tone information providing system 10 is physically constituted as a computer system (or an aggregate of computer systems) provided with a CPU (central processing unit), a memory, input units such as a mouse and keyboard, a display device such as a display, a storage unit such as a hard disk, and a communication device such as a modem.

[0013] The tone information providing system 10 includes, as functional components, a receiving section 101 (receiving means), a tone information selecting section 102 (tone information selecting means), a transmitting section 103 (transmitting means), a tone information recording section 104 (tone

information recording means), a request receiving section 105 (request receiving means), a past-record selecting section 106 (past-record selecting means), a past-record transmitting section 107 (past-record transmitting means), a tone information storing section 110 (tone information storing means), and a past-record information storing section 111 (past-record information storing means). Moreover, these components are described below in detail.

[0014] The receiving section 101 is a section for receiving the calling information transmitted from the mobile phone 30 and outputting the information to the tone information selecting section 102. More specifically, the calling information includes an addresser number (calling-terminal specifying information) which is the telephone number of the mobile phone 30 and an addressee number (called-terminal specifying information) which is the telephone number of the mobile phone 35. The calling information is information transmitted from the mobile phone 30 to the voice communication network 20 upon calling, which is then transmitted to the tone information providing system 10 by the voice communication network 20.

[0015] The tone information selecting section 102 is a section for selecting the tone information



corresponding to the calling information output from the receiving section 101 out of the tone information stored in the tone information storing section 110 and outputting the selected information to the transmitting section 104. In this case, examples of the information stored in the tone information storing section 110 are described below by referring to FIGS. 2A and 2B. According to the example shown in FIG. 2A, an "addressee number (called-terminal specifying information)" and a "tone source ID" are related each other and stored. The "addressee number" is the information serving as a key for specifying the "tone source ID" corresponding to the "addressee number" when a telephone number corresponding to the "addressee number" is called. The "tone source ID" is the information for specifying the tone information to be supplied to the mobile phone 30. As shown in FIG. 2B, the "tone source ID" and "tone information" are related each other and stored in the tone information storing section 110.

[0016] In FIG. 2A, a number "090-XXXX-XXXX" stored as an addressee number is the telephone number of the mobile phone 30 and a number "090-XXXX-YYYY" is the telephone number of the mobile phone 35. Therefore, when a user of the mobile phone 30 calls the number "090-XXXX-YYYY" (that is, calls the mobile phone 35),

the tone source ID of "music 01" is specified in accordance with the information table shown in FIG. 2A and the tone information of "music.wav" is specified in accordance with the information table shown in FIG.

5 2B. The information selecting section 102 selects the tone information of "music.wav" and outputs the tone information to the transmitting section 103 together with the tone source ID "music 01" of the tone information, addresser number "090-XXXX-XXXX", and  
10 addressee number "090-XXXX-YYYY."

[0017] The transmitting section 103 is a section for transmitting the tone information selected by the tone information selecting section 102 to the mobile phone 30. Moreover, the transmitting section 103  
15 outputs the tone source ID of "music 01", addresser number "090-XXXX-XXXX", and addressee number "090-XXXX-YYYY" to the tone information recording section 104. More specifically, when "music.wav" is output as tone information and "090-XXXX-XXXX" is output as a  
20 telephone number, the transmitting section 104 transmits the tone information of "music.wav" to the voice communication network 20 together with the telephone number "090-XXXX-XXXX" and the tone information "music.wav" is transmitted to the mobile  
25 phone 30 specified by the telephone number "090-XXXX-XXXX" from the tone communication network 20. The

voice communication network 20 continuously transmits the tone information "music.wav" until the mobile phone 30 establishes a call connection and stops the transmission when the call connection is established.

5 The mobile phone 30 generates a predetermined tone as a RBT (ring back tone, call output tone).

[0018] The tone information recording section 104 relates the tone source ID of "music 01", the addresser number "090-XXXX-XXXX" and addressee number "090-XXXX-YYYY" to store them in the past-record information storing section 111. FIGs. 3A and 3B show examples of the information stored in the past-record information storing section 111. According to the example in FIG. 3A, an "addresser number", "addressee number", "date and hour" and "tone source ID" are related each other to be stored. In this case, the "addresser number", "addressee number" and "tone source ID" are pieces of information output from the transmitting section 103. As to "date and hour", the date and hour corresponding to the call is specified by the tone recording section 104 to be stored. The "date and hour" corresponds to the date and hour when the tone information providing system 10 received the calling information transmitted from the mobile phone 30.

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[0019] In FIG. 3B, a "tone source ID", "tone source name 1", "tone source name 2", "link information 1" and "link information 2" are related each other and stored. The "tone source name 1" and "tone source name 2" are name information relating to the "tone source ID." For example, when the "tone source ID" is the "music 01", a "song 1" as a melody name has been stored in the "tone source name 1", and a "singer 1" as a singer name has been stored in the "tone source name 2." The "link information 1" and "link information 2" are pieces of information for respectively specifying a link destination on the web relating to the "tone source ID."

[0020] The request receiving section 105 receives a disclosure request transmitted from the mobile phone 30 used by a user and including at least the telephone number of the mobile phone 30. The disclosure request may include the information (time information) for specifying the date and hour talked by a user through the mobile phone 30. The request receiving section 105 outputs the disclosure request to the past-record selecting section 106.

[0021] The past-record selecting section 106 selects the information corresponding to the telephone number of the mobile phone 30 and stored in the past-record storing section in accordance with a disclosure

request received and output by the request receiving section 105. The past-record selecting section 106 outputs the selected information to the past-record transmitting section 107. More specifically, when the  
5 telephone number included in the disclosure request is "090-XXXX-XXXX", the section 106 selects "090-XXXX-YYYY" as a "addressee number" and "January 8, 2003, 13:00" as "date and hour" respectively in accordance with the information table exemplified in FIG. 3A, and  
10 selects the "song 1" as the "tone source 1", "singer 1" as the "tone source name 2", "uta.com" as the "link information 1" and "kasyu.com" as the "line information 2" respectively in accordance with the information table exemplified in FIG. 3B and outputs  
15 these data values to the past-record information transmitting section 107. Moreover, the past-record selecting section 106 may select one tone source ID out of a plurality of tone source IDs serving as prospects in accordance with the time information  
20 included in the disclosure request.

[0022] The past-record transmitting section 107 transmits the information selected and output by the past-record selecting section 106 to the mobile phone 30. According to the previously described example,  
25 the past-record transmitting section 107 transmits "090-XXXX-YYYY" as the "addressee number", "January 8,

2003, 13:00" as the "date and hour", "song 1" as the  
"tone source name 1", "singer 1" as the "tone source  
name 2", "uta.com" as the "link information" and  
"kasyu.com" as the "link information 2" respectively  
5 to the mobile phone 30. The mobile phone 30 displays  
these received pieces of information on a display, and  
a user can confirm these pieces of information.

[0023] Though this embodiment is constituted as the  
tone information providing system 10 as described  
10 above, it is also possible to disperse respective  
functional sections and stored pieces of information.  
For example, the tone information shown in FIG. 2B may  
be stored in a server system such as a tone source  
server. In this case, a plurality of tone source  
15 servers may be set or a plurality of pieces of tone  
information may be managed by classifying them and  
introducing management numbers such as tone source box  
numbers. Moreover, when storing tone information in a  
tone source server, the link information between a  
20 tone source ID and tone information may be used. In  
this case, a server system such as a portal server for  
storing link information to tone information may be  
introduced. A tone source ID and link information are  
related each other and stored in the portal server.  
25 When a tone source ID is specified, tone information

is specified in accordance with the link information corresponding to the specified tone source ID.

[0024] In this embodiment, entry information and reference information are transmitted from the mobile phone 30. However, entry information and reference information may be transmitted from another information communication terminal (such as a personal computer).

[0025] According to this embodiment, the tone information selecting section 102 selects tone information in accordance with an addressee number included in calling information out of the addressee numbers and tone information related each other and stored in the tone information storing section 110. Therefore, it is possible to provide the tone information set by the user of the mobile phone 35 serving as a communication terminal of a calling destination to the mobile phone 30 used by another user. Moreover, because an addresser number, addressee number, and tone information are related each other and stored in the past-record storing section 111, it is possible to hold the information showing the tone information used when calling the mobile phone 35.

[0026] Moreover, in this embodiment, the information relating to a disclosure request such as a

tone source name and link information stored in the  
past-record storing section 111 are transmitted in  
accordance with the disclosure request transmitted  
from the mobile phone 30 used by a user. Therefore it  
5 is possible to know the tone source name and link  
information used when calling the mobile phone 35.